

AD-A148 937 A LOOK AT MEAT AND POULTRY PRODUCTION IN THE SOVIET
UNION(U) ARMY WAR COLL CARLISLE BARRACKS PA
R A THOMPSON 29 MAY 84

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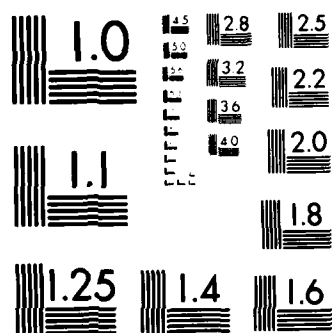
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STUDY PROJECT

A LOOK AT MEAT AND POULTRY PRODUCTION IN THE SOVIET UNION

BY

COLONEL RALPH A. THOMPSON
US ARMY RESERVE

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USAWC MILITARY STUDIES PROGRAM PAPER

A LOOK AT MEAT AND POULTRY PRODUCTION
IN THE SOVIET UNION

INDIVIDUAL STUDY PROJECT

by

Colonel Ralph A. Thompson
US Army Reserve

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US Army War College
Carlisle Barracks, Pennsylvania 17013
29 May 1984

ABSTRACT

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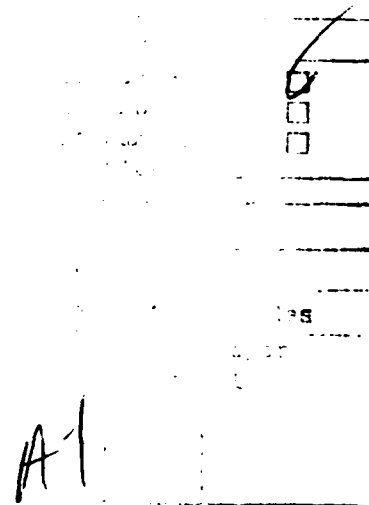
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71

TABLE OF CONTENTS

	page
ABSTRACT.	ii
LIST OF TABLES.	iv
CHAPTER I. INTRODUCTION	1
Background	1
Quest for a Quality Diet	3
II. ORGANIZATION OF SOVIET AGRICULTURE	6
The Collective Farm (Kolkhoz).	6
The State Farm (Sovkhoz)	7
The Private Sector	8
Other Production Means	10
III. AGRICULTURAL PRODUCTIVITY.	11
Climate and Soils.	11
Farmworker Productivity.	13
The Food Program	15
Meat and Poultry Production.	16
IV. GUNS OR BUTTER ISSUES.	18
V. SUMMARY AND CONCLUSIONS.	20
BIBLIOGRAPHY.	24



LIST OF TABLES

	Page
1. CAPITAL INVESTMENT IN APK	26
2. USSR UTILIZATION OF GRAIN FOR FEED	27
3. SOVIET GRAIN PRODUCTION AND IMPORTS.	28
4. SOVIET MEAT AND POULTRY PRODUCTION	29
5. SOVIET MEAT IMPORTS.	30
6. COMPARISON OF SOVIET MILITARY AND AGRICULTURAL EXPENDITURES	31

CHAPTER I

INTRODUCTION

BACKGROUND

It will be quite interesting to witness fifteen years hence what the media and others have to say about twentieth-century America and the passing of another millennium. Certainly, one of the great accomplishments of this period has to be the success story of American agriculture under the free enterprise system. During the initial days of the Republic, in 1789, Thomas Jefferson gave his views to John Jay regarding the advantages a free society derives from a people who are engaged in agriculture:

Cultivators of the earth are the most valuable citizens. They are the most vigorous, the most independent, the most virtuous, and they are tied to their country, and wedded to its liberty and interests, by the most lasting of bonds. As long, therefore, as they can find employment in this line, I would not convert them into mariners, artisans, or anything else.¹

Likewise, the Soviet Union recognizes the advantages that are derived from a citizenry with a rural or agricultural background, albeit from a much different perspective, as exemplified by a former KGB captain, Aleksei Myagkov when he said, "The recruiting of paratroopers is mainly from strongly-built country lads who are considered to be more reliable politically, who understand little of Soviet foreign policy, and know nothing about the West."²

In comparing the statements quoted above, one can gain a sense as to how the rural populations of the two superpowers differ. The American imagination is still fired by the Jeffersonian ideal and its way of life--some acreage, fully owned and debt free, that leads to self-sufficiency and a greater degree of independence. The Bolshevik Revolution similarly fired the Russian peasant's imagination when in November 1917, the Land Decree of the Soviet Government confiscated (without compensation) all land belonging to the landlords and the church. All land in the Soviet Union is "state property, that is the common property of the people" (Article 6 of the Constitution of the USSR); except, land may be made available for the use of organizations and private persons. However, unlike the American farmer of today, the Russian peasant's dream has long since vanished and as Strauss states, "But the peasant's age-old dream of owning the land instead of being attached to it and of doing what they liked with its produce proved no less impossible of realization under the new dispensation [Communism] than it had been under the old one [Tsarism]."³ The all-encompassing bureaucracy in which the peasant's dream vanished is best described by Laird:

All social, political, and economic activities are treated as part of an administrative unity, thereby rejecting any conception of separation of powers in government and rejecting the reservation of any activity as private and beyond the primary concern of the state--activities that are regarded as private affairs in other societies are either directly subsumed under the hierarchy or securely plugged into the hierarchy as an activity under one of the adjuncts to the system.⁴

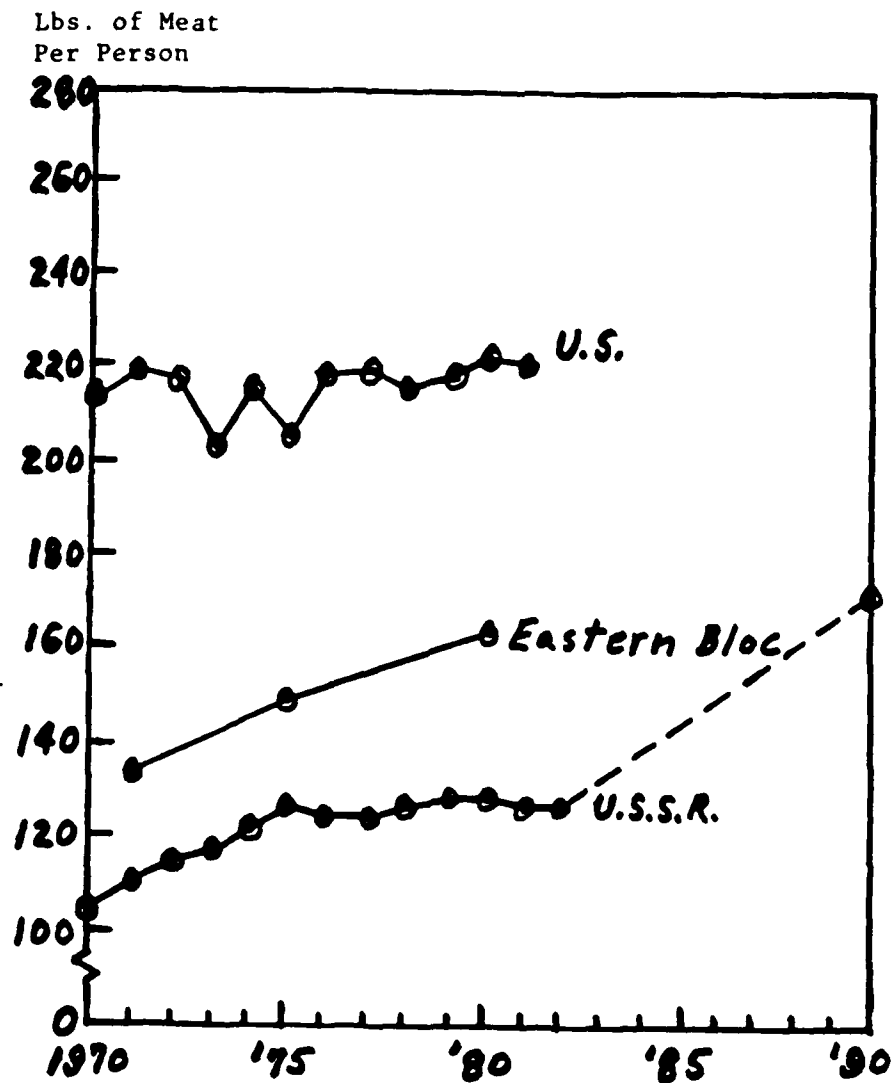
It is little wonder, then, that agricultural production remains the Achilles heel of the Soviet structure and that "private plots" produce about 30 percent of the meat, milk, and eggs, 60 percent of the potatoes, and more than 50 percent of the fruits and berries; while utilizing only 1.4 percent of total Soviet farm lands.⁵

QUEST FOR A QUALITY DIET

In an attempt to gain a well rounded view of a nation such as the USSR and make some estimate about its potential for belligerency, it may be well to analyze its ability to provide the citizenry with a diet that is adequate from both a quantity and quality standpoint. A measure of diet quality is the percentage of protein derived from meat and vegetable sources. It is estimated that a Soviet citizen gets only about 25 percent of the caloric intake from animal products as compared to 40 percent for an American. Russians eat much better than they did, but even so, almost half of the average Soviet caloric intake comes from grain products and potatoes. In those years when meat production is down, the Soviet fishing fleet may have to supply a quarter of the protein intake for the Soviet citizen. Chronic shortages of meat, as well as dairy products and fruits and vegetables, have been an increasing cause of consumer discontent in the USSR. There have been reports in the Western press of work stoppages at Soviet motor vehicle plants that were apparently caused by shortages of meat and dairy products.⁶ Traditionally, the increasing affluence of consumers causes a rising demand for meat. Evidently, this is true for Soviet consumers as well, especially with reserves of spendable income and ever present shortages of consumer goods.

Higher meat consumption (including poultry) has become the focal point of a better diet in the Communist bloc countries. The annual per capita consumption of meat products is compared (see Figure 1) for the United States, Soviet Union, and Eastern bloc countries (Bulgaria, Czechoslovakia, GDR, Hungary, Poland, Romania). The US per capita meat consumption is approximately twice that of the USSR and about 40 percent greater than that of the average East European. In the more prosperous Eastern bloc countries--the GDR and Czechoslovakia--the highest per capita meat consumption (193 pounds in 1980) is found. Poland and Hungary rank next with an average meat consumption rate of about 161 pounds in 1980. Bulgaria and Romania ranked last in per capita meat consumption of East European states with an average intake in 1980 of about 134 pounds. Of the Warsaw Pact countries, the USSR was at the bottom of the list in supplying meat products for its people in 1980, with the amount being 128 pounds. Thus, a recent article by P. Paskar says that the 12th Five-Year Plan will call for an increase in meat production to 172 pounds per capita by 1990.⁷

Figure 1. - Per Capita Meat Consumption in the
US and Warsaw Pact Countries



- Reference:
1. (US) United States Department of Agriculture, Agricultural Statistics 1982, p. 518.
 2. (Eastern Bloc) United States Department of Agriculture, ERS Foreign Agricultural Economic Report No. 195, Eastern Europe: Agricultural Production and Trade Prospects through 1990, p. 33.
 3. (USSR) United States Department of Agriculture, ERS Report RS-84-4, USSR: Outlook and Situation Report, p. 25.

CHAPTER II

ORGANIZATION OF SOVIET AGRICULTURE

Agricultural productivity is an everlasting problem in the Soviet Union and from time to time officials, to include Politburo members and ministers lose their jobs because of failure to adequately feed the people.^{8,9} There are three primary means of agricultural production in the USSR:

- The Collective Farm (Kolkhoz)
- The State Farm (Sovkhoz)
- The Private Sector

THE COLLECTIVE FARM (KOLKHOZ)

The average collective farm exceeds 16,000 acres in size with about 600 families living on the land. The land belongs to the State, but all the property on the Kolkhoz belongs to the members. The farm raises a variety of crops plus having herds of livestock. The Kolkhoz is a self-governing body that decides at general meetings what crops will be produced the coming year, how much will be sold to the State, what capital outlays are required, and how much each farmer can hope to make that year. Of course, these production decisions are made largely within the framework of the Soviet Five-Year Plan and the yearly quotas set forth therein. The Kolkhoz is generally committed via a five-year contract to sell the State certain amounts of produce for a given price. A more specific contract (based on the five-year contract) is signed at

the beginning of each year and obligates the Kolkhoz to deliver a definite amount of produce to the State within the current year. If the Kolkhoz were to produce more than planned, it could sell the excess to the State for a higher price, or even sell the overage on the open market at a high profit. However, if the harvest is poor and does not meet the amounts contracted for to the State, then the Kolkhoz members will receive little for their year's work and will undergo a period of extreme hardship.

The State constantly urges the Kolkhozes to band together in cooperative efforts to engage in enterprises that will improve productivity, e.g. slaughter houses, mechanized milking, etc. This has brought about Councils of Collective Farms with an attendant Party bureaucracy making the important decisions, rather than the Kolkhoz members which are ultimately affected. The Kolkhoz members are considered to be self-employed and enjoy a relatively low standard of living and educational level, as well as having a low party membership. The Soviet intent is to eliminate as many Kolkhozes as possible and convert them to State Farms.

THE STATE FARM (SOVKHOZ)

The State Farms normally exceed 50,000 acres and may have a population up to 2000 families. Unlike collective farms, the Sovkhoz usually specializes in one commodity, e.g. grain, vegetables, animal husbandry, etc. All of the property, as well as the land, on a Sovkhoz belongs to the State. The farmworkers are paid a straight salary which is independent of the size of the harvest and in bountiful years a bonus is paid. Since the Sovkhoz worker is a State employee, there is a much greater chance for education and advancement and Party membership is

much stronger. Thus, State Farms enjoy much more support from the Kremlin than do Collective Farms. In fact, there is a Ministry of State Farms in each of the 15 Soviet Republics. The director of the Sovkhoz is a State-appointed official and total decision making authority is vested in him. But as Laird notes,

Unfortunately, however, the Soviet official can, if he feels the need, impose his will on the farms, and the history of Soviet collectivization is full of examples of well-meaning outside authorities insisting on having their way, often in ignorance of on-the-farm conditions that render such demands nonsensical and sometimes harmful.¹⁰

In other words, politics may dictate the appointment of a Party bureaucrat who knows little or nothing about farming.

THE PRIVATE SECTOR

Farmworkers on both collective and state farms are allowed to work a small parcel of land (1/2 to 1 1/4 acres depending on the region and the quality of land) and use the produce as they see fit. The "private sector" bears true testament to the Capitalistic system where individual initiative is allowed to be rewarded, even on Soviet territory, and in many cases produces much more than the Socialist system. Over 30 percent of the annual agricultural production of the USSR comes from the effort expended on these private plots. Private producers are allowed, under a decree issued in January 1981, to own as many head of livestock as they can care for, so long as the animals are raised under contract with state and collective farms.¹¹ The farms can then sell the privately produced output to the State procurement agencies as part of their quota requirements. Thus, the private producer is no longer in direct competition with the Kolkhozes and Sovkhozes, but acts as a reinforcement to the Socialist system.

The Party leadership considers private production as a "transitional phenomenon that will gradually die out as progress is made towards a perfect communist social order and as the Kolkhozes and Sovkhozes become able to supply the entire population with food."¹² Even though the land remains State property, private production is alien to the Socialist system because it involves private ownership of cattle as well as equipment and buildings, which contradicts the Marxist-Leninist position on socialization of all production means. In short, the private sector contradicts the "scientific law" of the communist social order and continued private production is dependent on the failure of the Kolkhozes and Sovkhozes. Thus, the continuing need for the private sector was noted by the Central Committee of the Communist Party on 24 May 1982, when it approved a new "Food Program" to be in place until 1990 and said in part:

The Food Program emphasizes that the most important task of Soviet and agricultural organs and heads of farms and enterprises, and of trade union organizations is to create conditions so that every family living in the countryside would have a private plot and would keep livestock and poultry. Of late, a number of measures have been taken to see to it that the state, local Soviets, Kolkhozes and Sovkhozes assist the population in the development of personal household plots.¹³

Eastern Europe no longer considers private producers as disruptive elements in the socialized agricultural structure. The private sector is recognized and encouraged in all East bloc countries. In fact, the right to inherit land was strengthened in Poland and the area of land an individual can own was increased to about 125 acres.¹⁴

OTHER PRODUCTION MEANS

The new Food Program made mention of "subsidiary farms of industrial enterprises" and said that more than 9000 such farms have been established from the ground up in the last three years. These are thought to be farms that are tended by factory workers to raise produce for use in the company cafeterias, etc.¹⁵ These operations are probably much like the military farms that are located in remote garrisons and which provide Soviet soldiers with their only source of fruits and vegetables.

CHAPTER III

AGRICULTURAL PRODUCTIVITY

The United States is generally blessed with more abundant agricultural resources; by way of a good growing season, good productive soil, abundant rainfall, and a vast technological base, than is the Soviet Union. The total land area of the USSR is 5.5 billion acres, which is about 2.5 times larger than the 2.25 billion acres covered by the US (including Alaska and Hawaii). The Soviet cultivated land area is about one-half again larger than that of the US, with only about one-fifth more mouths to feed.

CLIMATE AND SOILS

There is no question that the United States does have a much more favorable geographic location and better weather conditions than does the Soviet Union. This fact was put in good perspective when former Soviet Minister of Agriculture Matskevich said:

US territory lies south of the 49th parallel, while only one-third of the agricultural land in the Soviet Union lies within this zone. In the USSR, only 1.1 percent of the arable land lies in the areas with an annual precipitation of 700 millimeter [28 inches] while in the United States it is 60 percent . . . Here 40 percent of the arable land lies in areas with an annual precipitation of 400 millimeters [16 inches], while in the United States it is 11 percent . . . More than two-thirds of the area sown to grain crops in the USSR is located in areas with insufficient precipitation . . . Severe and very severe droughts occur once in 3 years . . . Only about 1 year out of every 3 or 4 can be considered more or less favorable . . . The temperature ranges are also considerably different. In the USSR, 60 percent of the arable land lies within

areas having an average temperature up to 5°C [41°F], while this is true only slightly more than 10 percent in the United States.¹⁶

It cannot be overemphasized that the USSR is a high-latitude country with most of its agricultural production located between 40°N and 60°N latitude. This means that crops are grown under marginal conditions and that relatively small temperature and rainfall variations can cause large variations in crop production. Throughout almost all of the agricultural regions of the Soviet Union, except perhaps Central Asia and portions of the Trans Caucasus, a wet, cloudy harvest is the norm. This, coupled with the generally short harvest season, makes the harvest a complicated affair where field losses may approach 15-25 percent of the crop and that grain which is garnered is of low quality.¹⁷ In short, the well watered half of the USSR is mostly unsuitable for farming because the growing season is too short and too cold.

The most important agricultural soil type in the Soviet Union is the chernozems (black earth), which stretch from the Ukraine to beyond the Ural mountains. They are the counterparts of the mid-west prairie lands in the United States. Chernozem and chestnut soils--the latter slightly less fertile--cover only 13 percent of the USSR's area but make up for more than 60 percent of the arable land. Podzols and other agriculturally insignificant soils cover approximately 70 percent of the USSR, with the remaining 17 percent being various soil types that produce well if given careful management.¹⁸ Most land that will allow sustained agricultural production has been put to the plow.

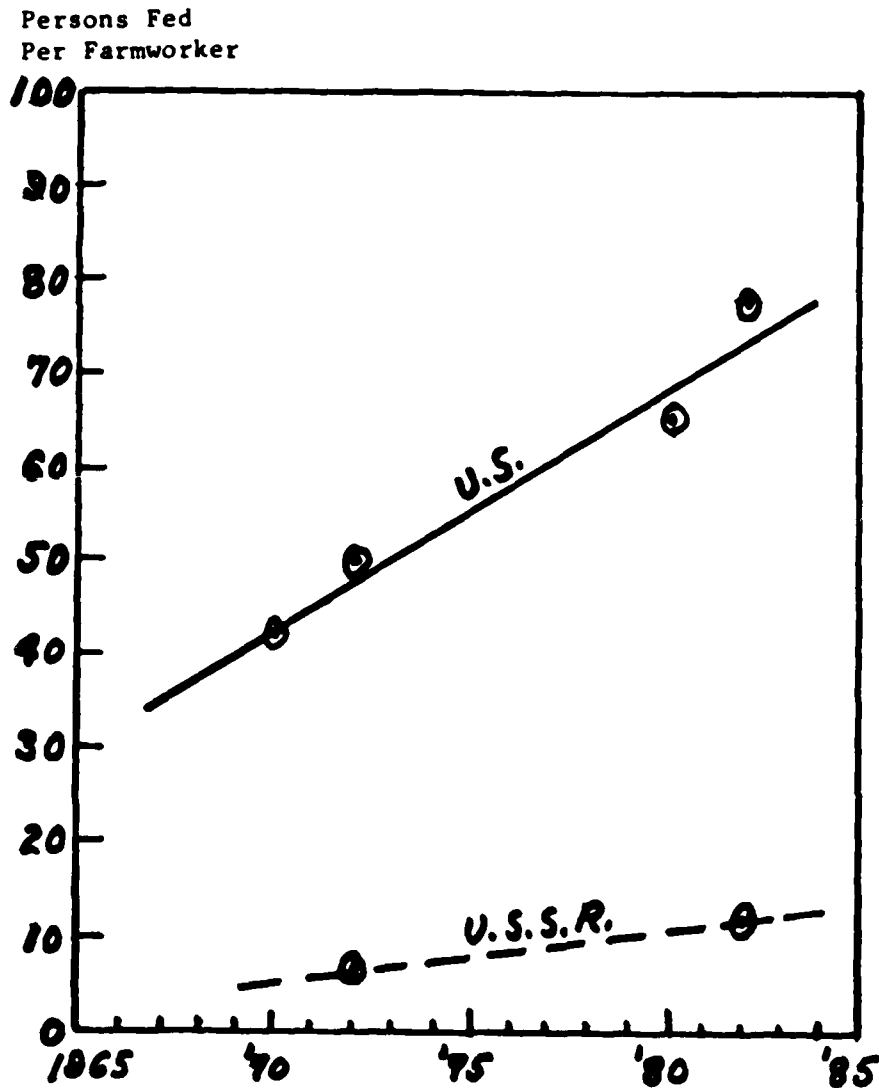
FARMWORKER PRODUCTIVITY

Low labor productivity and high costs of production are the hallmarks of USSR agriculture, which constitute an albatross around the neck of the Soviet economy. As a result, the Soviet Union is one the world's leading importers of agricultural products.

Approximately 3 million workers have left the Soviet collective and state farms over the last fifteen years, resulting in an aggregate number of 22.7 million farmworkers in 1982 or approximately 9 percent of the population.¹⁹ On the other hand, only 3.4 million farmworkers were on American farms in 1982 which translates to about 2 percent of the population.²⁰ A single American farmworker now supplies enough food and fiber for 78 people whereas his Soviet counterpart supplies the needs of only 11 people (see Figure 2). Professor D. Gale Johnson estimates Soviet labor productivity in agriculture to be only one-tenth that in similar climatic areas of North America.²¹

American farmers utilize higher quality feed in the production of meat and poultry than do the Soviets. Thus, the feed conversion ratio (converting feed into meat) is about 40 percent greater in the US, which means roughly that 40 percent more meat can be obtained using the same amount of feed in both cases.²² This mean that the American farmer, in the case of meat and poultry production, is not "spinning his wheels" nearly as much as is the Soviet farmer or peasant.

Figure 2. - Productivity Comparison of American
and Soviet Farmworkers



- Reference:
1. (US) United States Department of Agriculture, Misc. Pub. No. 1063, 1983 Fact Book of U.S. Agriculture, p. 2.
 2. (US) United States Department of Agriculture, A Teacher's Guide to People on the Farm, p. 2.
 3. (USSR) Central Statistical Board of the USSR, The USSR In Figures For 1982, pp. 131-135.
 4. (USSR) John L. Scherer, USSR Facts and Figures Annual, p. 75.

THE FOOD PROGRAM

The Central Committee of the Communist party approved a "Food Program" in May 1982 to greatly increase the per capita consumption of quality food products by 1990. However, the supplies of meat, dairy products, and fruit in 1990 will still fall short of the consumption norms established by the Soviet Institute of Nutrition.²³ The Food Program was created by the collective leadership of the Communist party and, thus, is unlikely to change because of Yuri Andropov's death. In fact, the present General Secretary of the Party, K. U. Chernenko, was an ardent supporter of the program at the time it was enacted and called it "a profound reconstruction of the national economy."²⁴

The Food Program is proclaimed to be a "radical solution" to the Soviet food problem and at its centerpiece is the creation of a Commission for the Agro-Industrial Complex (APK).²⁵ This commission is on a par with such sister organizations as the Military-Industrial Commission that coordinates the defense and civilian sectors in fulfillment of Soviet defense plans. Likewise, the charter of the APK is to plan, finance, and manage the agricultural sector, those industries serving it, and the follow-on production and marketing facilities. The goal of the APK is:

To secure the level and structure of the Soviet people's consumption of foodstuffs in line with the recommendations of medical science, to satisfy industry's need for agricultural raw materials, to eliminate the nation's dependence on imports of basic agricultural products, to build up the necessary reserves and export resources of food, and to eliminate socioeconomic distinctions between town and country.²⁶

The capital investment in the APK for the 11th Five-Year Plan (1981-85) calls for a 20 billion ruble increase over the actual expenditure during the 10th Five-Year Plan (see Table 1). The 1984 planned expenditure in the agro-industrial sector will approach 69 billion dollars. Investment in the agricultural sector, per se, is to decrease by two billion rubles, while the related industries (farm machinery, fertilizers, pesticides, etc.) are to receive the largest increase yet at almost three and one-half billion rubles. There are indications that the 12th Five-Year Plan will call for 33-35 percent of the national economy to be devoted to the APK, with agriculture's direct share being 27-28 percent. Thus, the edicts laid down by the Food Program seem to be bearing fruit. Another example of this came from an April 1983 issue of Pravda wherein it was reported that a Council of Minister's decree directed those ministries that enjoy the highest claims on Soviet resources, because of their association with the military, to insure the delivery of better-quality materials and sub-assemblies to the Minister of Tractor and Agricultural Machinery Building during 1984-90. This extraordinary measure was taken because of complaints about poor reliability and short service life of agricultural machinery. The newspaper account cited the re-equipping of agriculture as a "priority task of great economic and political significance."

MEAT AND POULTRY PRODUCTION

One segment of Soviet agriculture that has been especially perplexing is that of meat and poultry production. Meat production has historically been heavily dependent on available grain supplies rather than emphasizing forage or fodder crops in animal feeding programs.

This emphasis is presently changing somewhat, but over one-half of available grain stocks are still used to feed animals (see Table 2). The primary feed grains are wheat and course grains (rye, barley, oats, corn, millet) of which 40 and 69 percent, respectively, are fed. Practically all imported corn is used in raising cattle, hogs and poultry for slaughter.

Approximately on-half of all Soviet cropland is allocated to grain production with bread playing an important role in the Soviet psyche. A Soviet decision was made in 1981 to withhold reporting domestic grain output and, thus, the United States Department of Agriculture (USDA) has had to estimate the grain crop for the past three years. The estimated grain crop for 1983 was 195 million metric tons (see Table 3) against what the Soviet press reported as a target of 238 million metric tons. The willingness to undertake long-term import commitments, totaling 20 million metric tons a year, suggests that Soviet planners no longer believe they can reach the published targets for 1981-85. An important factor in the "imports equation" is the highly variable Soviet grain crop and the apparent long-term commitment to meat production, which could cause grain requirements to vary as much as 50 percent in any particular year. Purchases of such huge amounts of grain from the West must certainly cast the Socialist Order in an unfavorable light vis-a-vis Capitalism, with some degradation of international prestige.

The total Soviet meat production in 1983 was a record 16 million metric tons (see Table 4), which met the goal Khrushchev set in 1959 for 1965. At the same time, meat imports rose to a new high of 985 thousand metric tons (see Table 5). This appears to add further credence to the USSR's commitment to upgrading the diet of the Soviet people.

CHAPTER IV

GUNS OR BUTTER ISSUES

It was intriguing to hear Soviet Minister of Defense, D. F. Ustinov, refer to the positive results of the Food Program during opening remarks of a major speech on the Army, and Navy's role in fulfilling tasks specified in the June 1983 plenum.²⁷ The 1982 Food Program and subsequent decrees may signal a subtle change in priorities and maybe even a movement of resources from other economic sectors into agriculture. John Hardt, in the Joint Economic Committee's compendium of papers entitled the Soviet Economy in the 1980's: Problems and Prospects, says that if the arms race continues into the 1980's, it may generate such tremendous costs for the Soviets that they will face a real debate on defense matters. This is placed in better perspective when one compares resources allocated to both the military and agricultural sectors (see Table 6).

It is enough to set an economist's mind spinning when the tremendous dollar value of the military effort is considered along with the increased emphasis on agriculture and a quality diet. As shown in Table 6, the resources being allocated to food and agriculture amount to approximately one-third of the military budget. With the great fanfare given the Food Program, it seems reasonable that the Soviets would not raise the people's perception of their own welfare without good expectations of success. Thus, it does indeed seem that "guns or butter" issues will be looming forth by 1990, the close of the 12th Five-Year Program. One would expect to hear increasing calls for a freeze in

military spending during the latter half of this decade, as was the case at the Moscow summit meeting of Soviet bloc leaders in June 1983.

Another important economic consideration in East-West trade is the Soviet hard-currency supply. The USSR's hard-currency exports are concentrated in a few commodities that are subject to bothersome price fluctuations. Energy sales generally account for 70 percent of all Soviet hard-currency earnings. Soviet gold sales amounted to about 200 tons in 1982 as compared to approximately 50 to 60 tons in 1983. In addition, arms deliveries to Third World countries make up about 15 percent of the Soviet hard-currency account, which amounted to 6.7 billion dollars in 1980.²⁸ Agricultural imports absorbed about 25 percent of hard-currency assets.

CHAPTER V

SUMMARY AND CONCLUSIONS

It is quite probable that any shift in resources from the military-industrial sector to the agro-industrial complex will be difficult to discern and will receive little publicity because it would signal more serious internal troubles than the Soviet leadership would be willing to admit. Soviet military leaders would probably consider even a slight resource transfer to the APK as being a sign of weakness. The idea that military strength could be influenced by domestic economic considerations might be too bitter a pill to swallow, especially since it is military power that gives the USSR its superpower status. Indeed, it is difficult to perceive how a prolonged improvement in agricultural productivity can take place without basic economic reforms--more and better food, more consumer goods, less central planning, and more individual freedom. This would be antithetical to the Socialist Order and a direct challenge to the Communist leadership and the ruling elite. Thus, the Soviets can only re-wicker old programs and as Malish concludes "tinker on the periphery of the economy."²⁹

The USSR's adopted Food Program does appear to be a serious effort to improve the Soviet consumer's diet with quality food. There will undoubtedly be many guns-and-butter issues that will occur within the Kremlin over the months and years ahead. The implications that the Food Program holds for US policymakers should not be ignored. A high degree of astuteness will be required to take advantage of opportunities that

are likely to present themselves. For example, Sloan developed correlation coefficients for cooperative and conflict behavior directed toward the United States by nations receiving American grain and concluded that "US grain may be a means to influence cooperative political behavior toward the United States"³⁰ Laird expresses the view that the future US share of world grain exports could increase to near monopoly proportions and that

Obviously, the key to food becoming a major tool in our future dealings with the Soviet Union will be quiet, behind-the-scenes, step-by-step movements, dependent upon a most-careful monitoring of the actual situation that develops in the Soviet grain fields and meat counters.³¹

Thus, one should conclude that the recent negotiation of a new US-Soviet grain agreement, that allows the USSR to purchase at least four million metric tons of wheat and four million metric tons of corn annually through September 1988, is a correct move. In fact, there are many who will argue that, short of open conflict with the USSR, the United States should actively bargain to sell the Soviets as much grain and other agricultural commodities as possible. Again, Laird put the Soviet dilemma in a nutshell by saying:

As far as the USSR is concerned, if food imports are to become increasingly important, the hard currency needed to pay for them will demand increasingly difficult choices in the Kremlin. Therefore, SALT (Strategic Arms Limitation Talks) and other arms-reduction agreements could become vitally important to Soviet leaders caught in spiraling guns-and-butter choices, demanding important changes in Soviet investment priorities.³²

ENDNOTES

1. Saul K. Padover, Thomas Jefferson on Democracy, p. 68.
2. Aleksei Myagkov, "Soviet Sabotage Training for World War III," Soviet Analyst, pp. 2-6.
3. Erich Strauss, Soviet Agriculture in Perspective, p. 25.
4. Roy D. Laird, The Soviet Paradigm, pp. xix-xx.
5. Anton F. Malish, "Up on the Farm," Foreign Service Journal, p. 23.
6. Ibid., p. 25.
7. Planovoye Khozyaystvo, No. 5, pp. 3-13.
8. Leo Hecht, The USSR Today: Facts and Interpretations, pp. 79-85.
9. United States Department of Agriculture, ERS Report RS-84-4, USSR: Outlook and Situation Report, p. 7.
10. Roy D. Laird and Betty A. Laird, Soviet Communism and Agrarian Revolution, p. 87.
11. Malish, p. 24.
12. Karl-Eugene Wadekin, The Private Sector in Soviet Agriculture, p. 2.
13. Planovoye Khozyaystvo, No. 5, pp. 3-13.
14. United States Department of Agriculture, ERS Supplement 3 to WAS-31, Eastern-Europe: World Agriculture Regional Supplement: Review of 1982 and Outlook for 1983, p. 10.
15. Interview with Anton F. Malish, United States Department of Agriculture, Washington, 30 April 1984.
16. United States Department of Agriculture, ERS Foreign Agricultural Economic Report No. 92, Agriculture in the United States and the Soviet Union, pp. 2-3.
17. Paul E. Lydolph, et al., Recent Weather and Agriculture in the Soviet Union, pp. 2-6.

18. Central Intelligence Agency, USSR Agriculture Atlas, pp. 9-17.
19. Central Statistical Board of the USSR, The USSR in Figures for 1982, pp. 131-135.
20. United States Department of Agriculture, Misc. Pub. No. 1063, 1983 Fact Book of US Agriculture, p. 1.
21. D. Gale Johnson and Karen McConnell Brooks, Prospects for Soviet Agriculture in the 1980's, p. 140.
22. United States Department of Agriculture, ERS Report RS-84-4, p. 5.
23. Malish, p. 23.
24. United States Department of Agriculture, ERS Report RS-84-4, p. 16.
25. Anton F. Malish, "Soviet Agriculture: Domestic Reform and Foreign Technology," Briefing for the Economics Panel of the United Nations Association of the United States of America, pp. 2-3.
26. Planovoye Khozyaystvo, No. 5, pp. 3-13.
27. Malish, p. 27.
28. John L. Scherer, USSR Facts and Figures Annual, pp. 278-279.
29. Malish, p. 26.
30. Thomas J. Sloan, "The Political Role of US Grain Exports in a 'Hungry World'," in The Role of US Agriculture in Foreign Policy, ed. by Richard M. Fraenkel, et al., p. 36.
31. Roy D. Laird, "Grain As A Foreign Policy Tool In Dealing with the Soviets: A Contingency Plan," Ibid., p. 88.
32. Ibid., p. 87.

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TABLE 1. - CAPITAL INVESTMENT IN APK*

<u>Year</u>	<u>Total</u>	<u>Agricultural Sector</u>	<u>Related Industries</u>
		Billion Rubles	
1976-80	213.0	171.0	42.0
1981	45.8	37.2	8.6
1982	45.6	38.3	7.3
1983	48.0	40.0	8.0
1984(Plan)	49.4	38.0	11.4
1981-85(Plan)	233.0	190.0	43.0

NOTE: The exchange rate for the ruble fluctuated from \$1.33 in 1976 to \$1.54 in 1980.

*REFERENCE: United States Department of Agriculture, ERS Report RS-84-4
USSR: Outlook and Situation Report, p. 14.

TABLE 2. - USSR UTILIZATION OF GRAIN FOR FEED*

Year beginning <u>July 1</u>	Feed Utilization --	
	<u>Million Metric Tons</u>	<u>Percent of Stocks</u>
1976/77	112	51
1977/78	122	54
1978/79	125	54
1979/80	123	55
1980/81	119	53
1981/82	116	55
1982/83	117	55
1983/84	123	55

*REFERENCE: United States Department of Agriculture, ERS Report RS-84-4,
USSR: Outlook and Situation Report, p. 23 (Table 2.).

TABLE 3. - SOVIET GRAIN PRODUCTION AND IMPORTS*

Year beginning <u>July 1</u>	Total Grain --	
	<u>Production</u>	<u>Imports</u>
	Million Metric Tons	
1976/77	223.8	11.0
1977/78	195.7	18.9
1978/79	237.4	15.6
1979/80	179.2	31.0
1980/81	189.1	34.8
1981/82	160.0	46.0
1982/83	180.0	32.5
1983/84	195.0	31.0

*REFERENCE: United States Department of Agriculture, ERS Report RS-84-4,
USSR: Outlook and Situation Report, p. 23 (Table 2.).

TABLE 4. - SOVIET MEAT AND POULTRY PRODUCTION*

<u>Year</u>	<u>Beef & Veal</u>	<u>Pork</u>	<u>Mutton, Lamb & Goat</u>	<u>Poultry</u>	<u>Other</u>	<u>Total</u>
1,000 Metric Tons						
1966-70 (Avg)	5,187	4,327	992	853	224	11,583
1971-75 (Avg)	5,985	5,394	972	1,335	318	14,004
1976-80 (Avg)	6,827	5,009	882	1,835	290	14,843
1981	6,627	5,220	846	2,255	253	15,201
1982	6,618	5,265	816	2,425	238	15,362
1983	6,800	5,550	850	2,600	200	16,000

*REFERENCE: United States Department of Agriculture, ERS Report RS-84-4,
USSR: Outlook and Situation Report, p. 24 (Table 5.).

TABLE 5. - SOVIET MEAT IMPORTS*

<u>Year</u>	<u>Imports</u>
	1,000 Metric Tons
1975	515
1976	362
1977	617
1978	184
1979	611
1980	821
1981	980
1982	939
1983	985

*REFERENCE: United States Department of Agriculture, ERS Report RS-84-4,
USSR: Outlook and Situation Report, p. 29 (Table 11.).

TABLE 6. - COMPARISON OF SOVIET MILITARY AND
AGRICULTURAL EXPENDITURES

<u>Year</u>	<u>Military</u> ¹	<u>Agricultural</u> <u>Imports</u> ²	<u>APK Investment</u> ³
Million Dollars			
1975	200,000.0	9,145.7	---
1976	215,000.0	9,330.9	---
1977	217,000.0	9,131.0	---
1978	217,000.0	10,241.3	---
1979	222,000.0	13,331.3	---
1980	230,000.0	17,232.4	65,604.0
1981	238,000.0	20,904.5	63,662.0
1982	245,000.0	19,327.1	62,928.0

REFERENCE: 1. John L. Scherer, USSR Facts & Figures Annual, p. 134.

2. United States Department of Agriculture, ERS Report RS-84-4, USSR: Outlook and Situation Report, p. 28 (Table 10.).

3. Ibid., p. 14.

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